RAMROD 200

Adjustable Stabilizer Key Concept

Kit No. CBMD-009

CB Model Designs

www.cbmodeldesigns.com

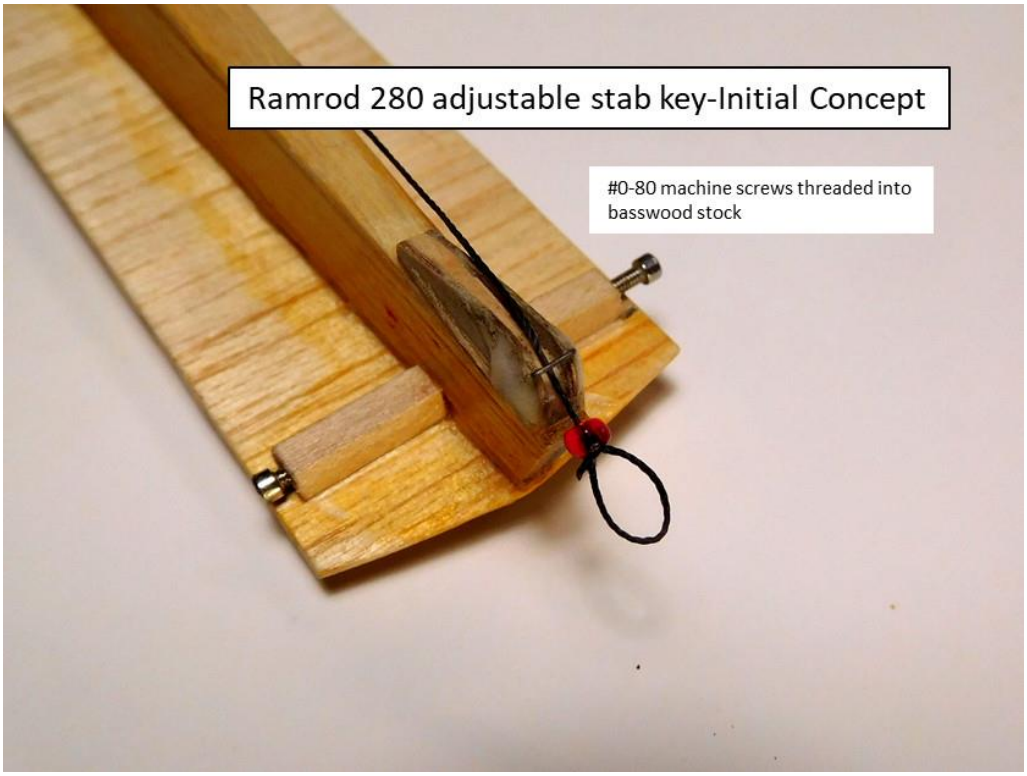
How it Works

I wanted to have a simple way to field adjust the stabilizer assembly to provide fin angle changes. Traditionally, I would hard key a stabilizer assembly to the platform based on my bench setup to provide the accuracy needed to at least get the fin close to being on the centerline of the airplane. Once trimming sessions started, I would often break the stab keys off in the field and re-set them to where I thought the position of the stab would improve things. This usually involved some wait time for cellulose glue to dry before flight testing to see if my corrections were effective. On this model, I decided to try something more ambitious and eliminate the key removal process and wait time to re-install.

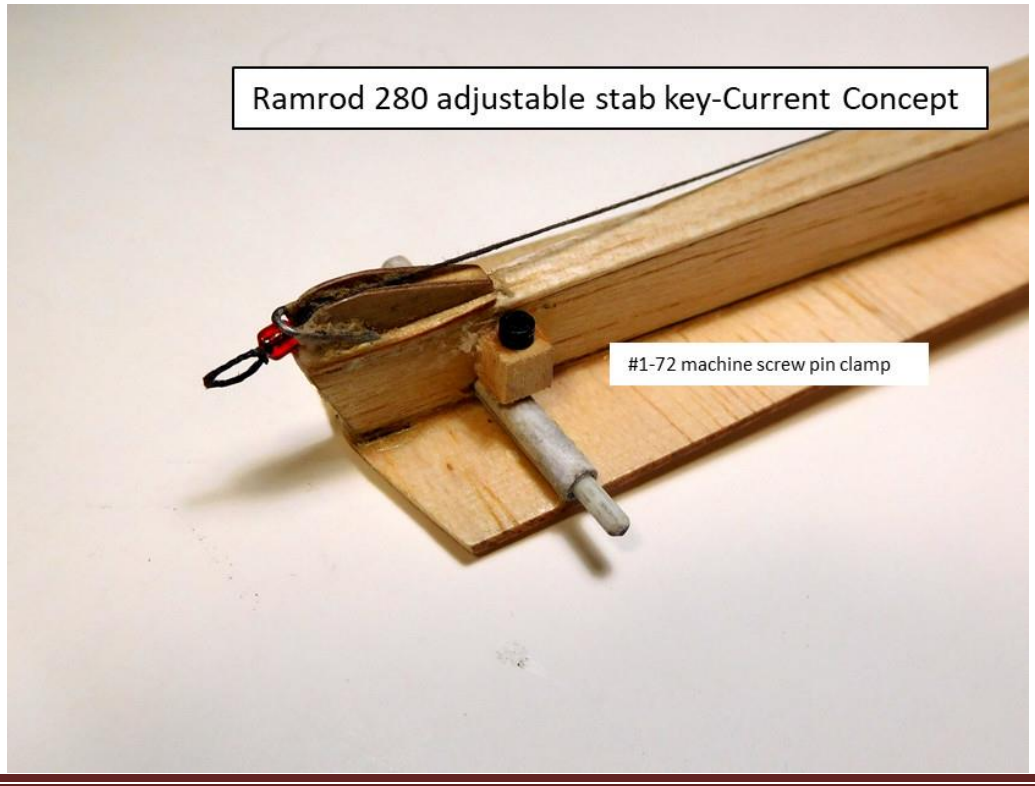
The initial concept involved two #0-80 machine screws threaded into 3/16 square basswood blocks glued to the underside of the stab platform. This worked fine, but having two separate screws to adjust was not as easy as it looks and was more fiddley to get things in place and fitting properly against the key surfaces.

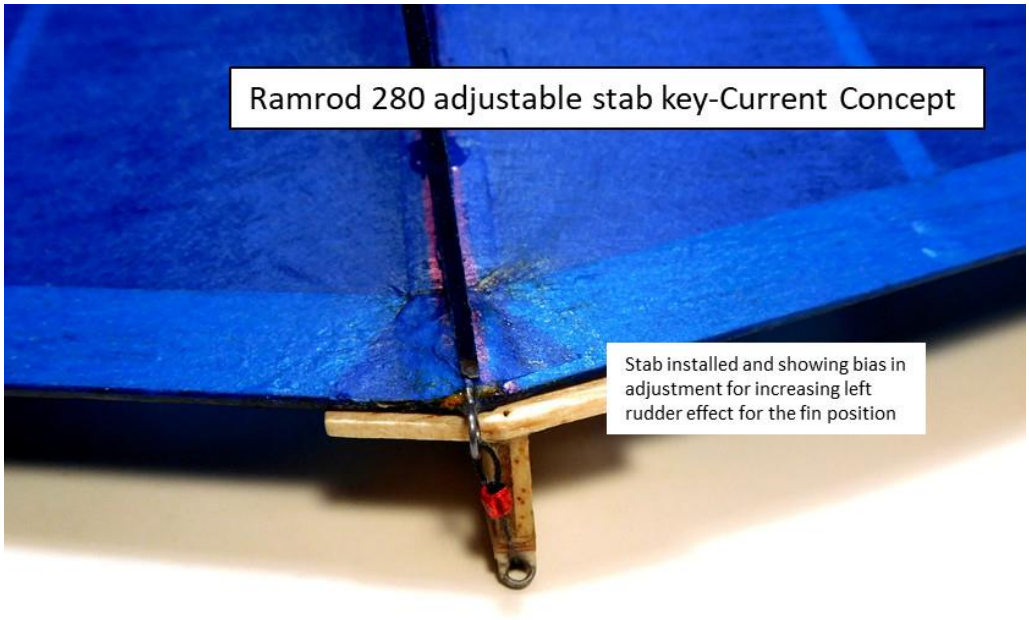
A better method is to key the stab to a sliding pin. The only adjustment is to loosen the clamping screw to allow the stab to slide to the side for desired fin angle changes you want to make, and tighten to hold it in place. Then go fly the model to see if your adjustment improved anything.

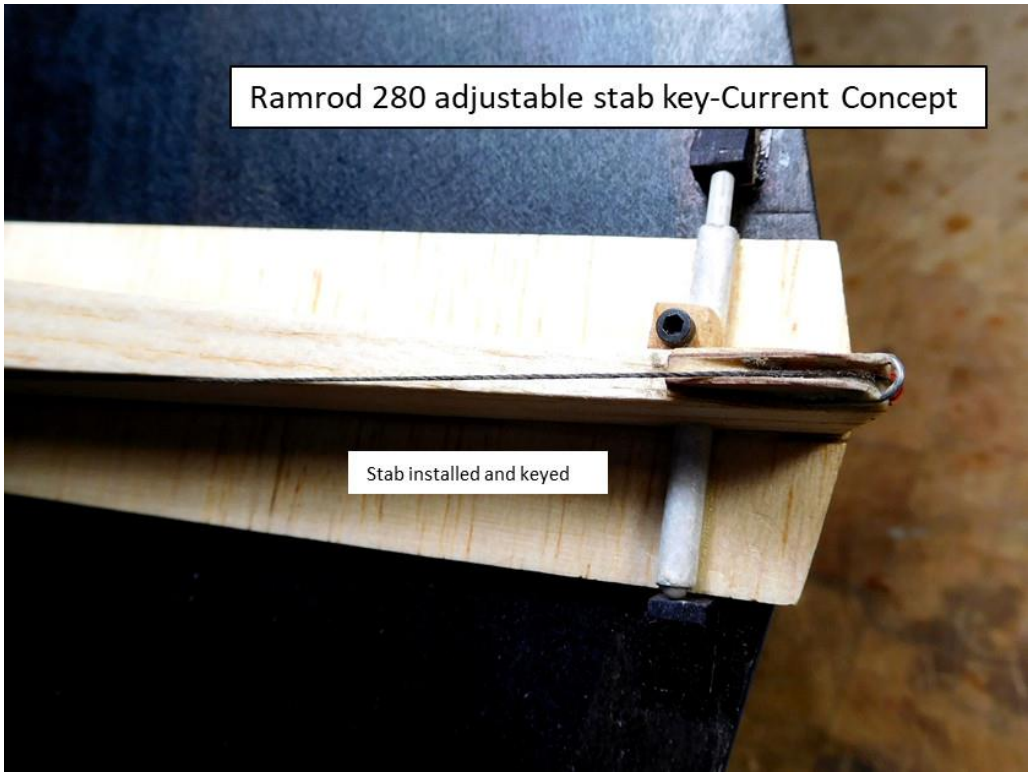
Clint Brooks
10 March 2019

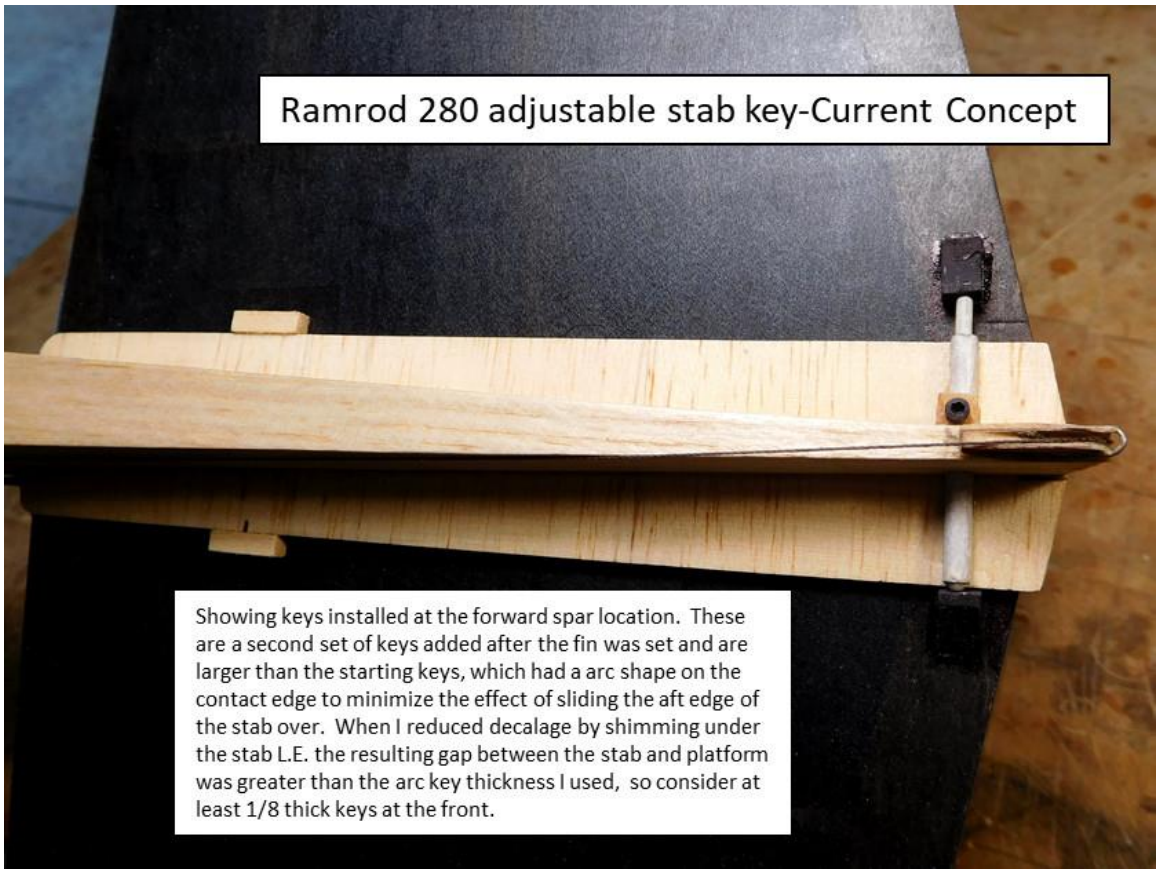



Ramrod 280 adjustable stab key-Current Concept
Sliding pin for lateral adjustment
Note the same trim bias between
these two models


Ramrod 280 adjustable stab key-Current Concept
#1-72 machine screw pin clamp


Ramrod 280 adjustable stab key-Current Concept
Stab installed and showing bias in adjustment for increasing left rudder effect for the fin position


Ramrod 280 adjustable stab key-Current Concept
Stab installed and keyed


Ramrod 280 adjustable stab key-Current Concept
Showing keys installed at the forward spar location. These are a second set of keys added after the fin was set and are larger than the starting keys, which had a arc shape on the contact edge to minimize the effect of sliding the aft edge of the stab over. When I reduced decalage by shimming under the stab L.E. the resulting gap between the stab and platform was greater than the arc key thickness I used, so consider at least 1/8 thick keys at the front.